

What is claimed is:

1 1. A method of treating patients for obesity, which comprises the steps of:

2 performing bilateral stimulation of the patient's vagus nerve by applying a stimulating
3 electrical signal to the right and left vagi, wherein the parameters of said signal are
4 predetermined to produce a sensation of satiety in the patient.

1 2. The method of claim 1, including the step of applying said stimulating
2 electrical signal intermittently to the right and left vagi.

1 3. The method of claim 2, wherein said intermittent application of said stimulating
2 electrical signal is chronic.

1 4. The method of claim 1, including the step of applying said stimulating
2 electrical signal continuously to the right and left vagi.

1 5. The method of claim 1, including the step of applying said stimulating
2 electrical signal to the right and left vagi during a customary mealtime according to the
3 patient's circadian cycle.

1 6. The method of claim 1, including the step of applying said stimulating
2 electrical signal to the right and left vagi upon delivery of an external commencement signal

3 administered by the patient.

1 7. The method of claim 1, including the step of applying the same stimulating
2 electrical signal to both the right and left vagi.

1 8. The method of claim 1, including the step of applying a different stimulating
2 electrical signal to the right vagus from the stimulating electrical signal applied to the left
3 vagus.

1 9. The method of claim 1, including using separate nerve stimulator generators
2 for stimulating the left and right vagi.

1 10. The method of claim 9, including implanting said separate nerve stimulator
2 generators into the patient.

1 11. The method of claim 1, including implanting nerve stimulator generator
2 apparatus into the patient for said bilateral stimulation of the vagi.

1 12. The method of claim 1, including the step of applying said stimulating
2 electrical signal supra diaphragmatically to the left and right vagi.

1 13. The method of claim 1, wherein said stimulating electrical signal is

2 characterized by a current magnitude below a predetermined retching level.

1 **14.** The method of claim 1, wherein said stimulating electrical signal is a pulse
2 signal having a prescribed on-off duty cycle.

1 **15.** The method of claim 14, including the step of applying said stimulating
2 electrical signal continuously to the right and left vagi so that pulses are applied during the on
3 portion of said duty cycle and not during the off portion of said duty cycle.

1 **16.** The method of claim 15, including using separate nerve stimulator generators
2 for stimulating the left and right vagi.

1 **17.** The method of claim 15, including implanting separate nerve stimulator
2 generators into the patient to stimulate the left and right vagi.

1 **18.** The method of claim 15, including the step of applying said stimulating
2 electrical signal supra diaphragmatically to the left and right vagi.

1 **19.** The method of claim 15, wherein one of said parameters of said stimulating
2 electrical signal is a pulse current magnitude below a predetermined level at which the signal
3 tends to produce retching in the patient.

1 **20.** The method of claim 15, wherein said pulse signal has a pulse current
2 magnitude in a range up to about 6 ma.

1 **21.** The method of claim 20, wherein said pulse signal has a pulse width in a range
2 up to about 500 ms.

1 **22.** The method of claim 21, wherein said pulse signal has a repetition frequency
2 of about 30 Hz.

1 **23.** The method of claim 22, wherein said pulse signal has a duty cycle with a ratio
2 of on to off of about 1:1.8.

1 **24.** A method of treating patients for compulsive overeating, which comprises the
2 steps of:
3 stimulating left and right branches of the patient's vagus nerve simultaneously with
4 electrical pulses in a predetermined sequence of a first period in which pulses are applied
5 continuously, alternating with a second period in which no pulses are applied.

1 **25.** The method of claim 24, including the step of applying said electrical pulses
2 to the vagus nerve at a supradiaphragmatic location.

1 **26.** The method of claim 25, wherein said pulses have an electrical current

2 magnitude not exceeding about 6 ma.

1 27. The method of claim 26, wherein said electrical current magnitude is
2 preselected to be less than a level that induces retching in the patient.

1 28. The method of claim 27, wherein said pulses have a width not exceeding about
2 500 ms.

1 29. The method of claim 28, wherein said pulses have a repetition frequency of
2 about 30 Hz.

1 30. The method of claim 29, wherein said second period is 1.8 times as long as said
2 first period.

1 31. Apparatus for treating patients suffering from compulsive eating disorder,
2 comprising:

3 implantable neurostimulator device means for simultaneously stimulating left and right
4 branches of the patient's vagus nerve with electrical pulses in a predetermined sequence of a
5 first period in which pulses are applied continuously, alternating with a second period in which
6 no pulses are applied; and

7 electrode means for implantation on said right and left branches in a
8 supradiaphragmatic position.

1 **32.** The apparatus of claim **31**, wherein said neurostimulator device means
2 generates pulses with an adjustable electrical current magnitude not exceeding about 6 ma.

1 **33.** The apparatus of claim **32**, wherein said neurostimulator device means
2 generates pulses having an adjustable width not exceeding about 500 ms.

1 **34.** The apparatus of claim **33**, wherein said neurostimulator device means
2 generates pulses at a repetition frequency of about 30 Hz.

1 **35.** The method of claim **34**, wherein said second period is adjusted to be 1.8 times
2 as long as said first period.

1 **36.** The method of claim **1**, wherein said electrical signal is applied synchronously
to the right and left vagi.

37. The method of claim **1**, wherein said electrical signal is applied asynchronously
to the right and left vagi.

1 **38.** The method of claim **1**, wherein said electrical signal is applied to the right
2 and left vagi indirectly by stimulating the stomach or other visceral organ